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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/607,858	06/27/2003	Alan Michael Jaffee	7304	7146

7590 12/27/2004  
JOHNS MANVILLE  
Legal Department  
10100 West Ute Avenue  
Littleton, CO 80127

EXAMINER

BOYD, JENNIFER A

ART UNIT	PAPER NUMBER
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1771

DATE MAILED: 12/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/607,858	JAFEE, ALAN MICHAEL	
	<b>Examiner</b>	<b>Art Unit</b>	
	Jennifer A Boyd	1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2003.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) 28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 and 29-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>12/8/03</u>   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1 – 27 and 29 - 32, drawn to a gypsum board, classified in class 442, subclass 180.
  - II. Claim 28, drawn to a process for manufacturing a hydraulic set material, classified in class 162, subclass 145.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed can be made by another and materially different process such as pre-manufacturing the hydraulic set material layer and first and second facers and then laminating the layers together simultaneously.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with Robert Touslee on December 17, 2004 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-27 and 29 - 32. Affirmation of this election must be made by applicant in replying to this Office

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action. Claim 28 is withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1 – 32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. Claims 1 – 8, 22, 27, 29 – 30 and 32 have the limitation of “chopped continuous glass fibers”. It should be noted that continuous fibers traditionally are long fibers. It appears that the Applicant is attempting to indicate that the glass fibers were originally continuous and then were subsequently chopped into short fibers for incorporation into the mat. However, the method of obtaining the chopped fibers and the initial product of continuous fibers is irrelevant. It is suggested to the Applicant to amend the claim to “chopped glass fibers” to make the claim language clearer.

8. Claim 16 recites that the fibrous mat further comprises “effective amounts” of fine particles of limestone, etc. What constitutes “effective amounts”? The Examiner cannot compare the claim to prior art because it is unknown what amounts would be considered “effective amounts”. For the purposes of examination at this time, the Examiner will assume the presence of any amount of the listed substances would constitute an “effective amount”.

***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1 – 3, 7 – 15, 17 – 18, 21 – 24, 27, 29 and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Jaffee (US 5,772,846).

Jaffee is directed to a nonwoven glass fiber mat for facing gypsum board (Title).

As to claims 1, 19 – 22, 27 and 32, Jaffee teaches a nonwoven fibrous mat for use as a facer on a gypsum insulating board (column 2, lines 1 – 15). Jaffee teaches that the mat comprises a major portion of textile glass fibers and a minor portion of polymer fibers (column 2, lines 50 – 60). Jaffee teaches that the nonwoven mat is bound together with a latex (column 2, lines 35 – 45). The Examiner equates the latex to Applicant's "resinous binder". Jaffee teaches that the glass fibers can have a length between 0.25 and 1 inch (column 3, lines 55 – 60); the Examiner equates this short length to Applicant's "chopped continuous fibers". Jaffee teaches that the glass fibers have an average diameter from about 9 microns to 20 microns (column 3, lines 35 – 40). Jaffee states that it is known to face a gypsum wall board with a fiber glass nonwoven mat as shown in US. Patent No. 4,647,496, the disclosure of which is hereby incorporated by reference. It should be noted that phrase "incorporated by reference" means that the information incorporated is as much a part of patent as if the text was repeated in the patent, and should be treated as part of the text of the patent. Therefore, although not explicitly shown in Jaffee, the incorporated US Patent No. 4,647,496 shows in Figure 8 that the nonwoven fibrous

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mat facing materials are applied to both sides of the gypsum board. It should be noted that both of the facing materials have the same composition. US Patent No. 4,647,496 further teaches that the gypsum material is “set” (Abstract); it should be noted that the limitation of “hydraulic” is not given any patentable weight because of the method of making the gypsum board is not germane to the issue of patentability of the product itself. The Examiner equates the facing material applied to the first and second sides of the gypsum board as “first facer” and “second facer”.

As to claims 2 and 3, Jaffee teaches that the glass fibers can comprise any type of glass fibers, but E type, C type, T type and sodium borosilicate are preferred (column 3, lines 34 – 40).

As to claims 7, Jaffee teaches that the glass fiber lengths can range from 0.25 inches to 1 inch (column 3, lines 55 – 60), or equal to 6.35 – 25.4 mm. It should be noted that the Applicant’s range overlaps the range stated by Jaffee.

As to claim 8, Jaffee teaches that the glass fibers can all have the same length (column 3, lines 54 – 56).

As to claim 9, Jaffee teaches that the latex, or “resinous binder”, comprises a crosslinkable vinyl chloride acrylate copolymer latex (column 3, lines 60 – 67). Jaffee states that an aqueous stearylated melamine emulsion can be added to the latex to act as an external crosslinker (column 4, lines 14 – 30). Therefore, it is the position of the Examiner that the final product latex would be crosslinked as required by the Applicant.

As to claim 10, Jaffee teaches that the latex, or “resinous binder”, comprises a crosslinkable vinyl chloride acrylate copolymer latex (column 3, lines 60 – 67) which is subsequently crosslinked (column 4, lines 14 – 30). It is the position of the Examiner that the

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crosslinked latex is equivalent to Applicant's "modified acrylic latex binder" because an acrylate is an acrylic.

As to claims 11 - 12, Jaffee teaches that the stearylated melamine emulsion, which acts as a crosslinker, is present in the amount of up to 10 weight percent (column 4, lines 30 – 38).

As to claim 13, Jaffee teaches that stearylated melamine emulsion is mixed with copolymer latex and water to create a binder for the mats (column 4, lines 15 – 20).

As to claim 14, Jaffee teaches that the crosslinkable vinyl chloride acrylate copolymer latex has a glass transition temperature of up to 113 degrees F (column 3, lines 60 – 68). It should be noted that the Applicant requires a glass transition temperature range of about 15 to 45 degrees Celsius (15 – 133 degrees F).

As to claim 15, Jaffee teaches that the stearylated melamine emulsion provides water repellency to the mat (column 4, lines 20 – 25).

As to claims 17 and 18, Jaffee teaches that the facer material or "fibrous mat" can weigh about 1.8 to 2.2 pounds per 100 square feet (column 3, lines 18 – 25).

As to claims 23 and 24, it should be noted that Jaffee states that it is known to face a gypsum wall board with a fiber glass nonwoven mat as shown in US. Patent No. 4,647,496, the disclosure of which is hereby incorporated by reference. It should be noted that phrase "incorporated by reference" means that the information incorporated is as much a part of patent as if the text was repeated in the patent, and should be treated as part of the text of the patent. Therefore, although not explicitly taught in Jaffee, the incorporated US Patent No. 4,647,496 teaches that the gypsum core has water-resistant properties imparted by the incorporation of one or more additives (column 9, lines 49 – 60). US Patent 4,647,496 also teaches that the gypsum

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board can further comprise a paper fiber which acts as a viscosity-control agent (column 13, lines 15 – 20).

As to claim 29, Jaffee teaches a nonwoven fibrous mat for use as a facer on a gypsum insulating board (column 2, lines 1 – 15). Jaffee teaches that the mat comprises a major portion of textile glass fibers and a minor portion of polymer fibers (column 2, lines 50 – 60). Jaffee teaches that the nonwoven mat is bound together with a latex (column 2, lines 35 – 45). The Examiner equates the latex to Applicant's "resinous binder". Jaffee teaches that the glass fibers can have a length between 0.25 and 1 inch (column 3, lines 55 – 60); the Examiner equates this short length to Applicant's "chopped continuous fibers". Jaffee teaches that the glass fibers have an average diameter from about 9 microns to 20 microns (column 3, lines 35 – 40).

11. Claims 1, 16 and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Kennedy et al. (US 5,308,692).

Kennedy is directed to fire resistant mat (Title) useful for covering gypsum boards (column 1, lines 10 – 15).

As to claim 1, Kennedy teaches that the fire resistant mat comprises a blended web of mineral wool fibers and monofilament glass fibers wherein the fibers are bonded by a heat settable fire resistant binder (column 3, lines 64 – 69). Kennedy teaches that the glass fibers used in the mat have a diameter from between 10 and 20 microns and have a length of about 1.2 – 4.4 cm (column 4, lines 43 – 50). Kennedy notes that the mat is a non-woven fiber mat (Abstract).

As to claims 16 and 25, Kennedy teaches that the binder used in the mat can further comprise a biocide (column 6, lines 10 – 15).

***Claim Rejections - 35 USC § 102/103***

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 26 and 31 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Jaffee (US 5,772,846).

Although Jaffee does not explicitly teach the claimed flame resistance to pass the test of ASTM Method E84, Class 1 as required by claim 26 and a permeability of 300 cfm/ft<sup>2</sup> as required by claim 31, it is reasonable to presume that said properties are inherent. Support for said presumption is found in the use of like materials (i.e. a gypsum board sandwiched by two facing layers comprising chopped glass fibers having a diameter from 9.5 – 12.5 microns which would result in the claimed properties. The burden is upon the Applicant to prove otherwise. *In re Fitzgerald* 205 USPQ 594. In addition, the presently claimed property would obviously have been present once the Jaffee product is provided. Note *In re Best*, 195 USPQ at 433, footnote 4 (CCPA 1977) as to providing of this rejection made above under 35 USC 102.

***Claim Rejections - 35 USC § 103***

14. Claims 4 – 6, 19 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jaffee (US 5,772,846).

As to claims 4 – 6, Jaffee teaches that the glass fibers have an average diameter from about 9 microns to 20 microns (column 3, lines 35 – 40). Jaffee teaches that the mat has a major portion of glass fibers and a minor portion of polyester fibers (Abstract). Jaffee further teaches that a minor portion of the glass fibers can have a diameter of 0.4 – 2 microns (column 3, lines 40 – 47).

As to claim 19, Jaffee teaches that the facer material or “fibrous mat” can preferably weigh about 1.8 to 2.2 pounds per 100 square feet (column 3, lines 18 – 25). Jaffee indicates that the mat can be any weight (column 3, lines 14 – 18).

Jaffee fails to disclose that the glass fibers having a diameter of between 9.5 – 12.5 microns comprise at least 90% by weight of the glass fibers as required by claims 4 and 30, at least 95% as required by claim 5, at least 97% by weight as required by claim 6 and the fibrous mat has a basis weight of about  $1.25 \pm 0.2$  pounds per 100 square feet as required by claim 19. It should be noted that the percentage of glass fibers having a diameter of 9.5 – 12.5 microns is a result effective variable. For example, as the amount of larger diameter glass fibers increases, the material becomes less irritating to the skin while losing high efficiency filtration capabilities (Jaffee, columns 2 and 3). As the weight of the mat increases, the fabric becomes denser, stronger but less pliable. It would have been obvious to one having ordinary skill in the art at the time the invention was made to create facing mats with glass fibers having a diameter of between 9.5 – 12.5 microns comprise at least 90% by weight of the glass fibers as required by claims 4 and 30, at least 95% as required by claim 5 and at least 97% by weight as required by claim 6 and the fibrous mat has a basis weight of about  $1.25 \pm 0.2$  pounds per 100 square feet as required by claim 19 since it has been held that discovering an optimum value of a result effective

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variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In the present invention, one would have been motivated to optimize the amount of glass fibers having a diameter of between 9.5 – 12.5 microns and the basis weight in order to create a facing material with optimal filtration capabilities, flexibility and strength while minimizing skin irritation during installation.

15. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jaffee (US 5,772,846) in view of Horner, Jr. et al. (US 6,365,533).

Jaffee teaches the claimed invention above but fails to disclose that the second facer can comprise kraft paper.

Horner, Jr. et al. is directed to a foamed facer suitable for use in the construction industry comprising a dry preformed glass fiber mat containing a binder (Abstract). Horner teaches that the first and second facers can be of the same or of a different composition than that of this invention. More specifically, one of the facer sheets maybe be selected from those conventionally employed such as kraft paper and the other facer sheet is one of the current invention which enhances the composite (column 6, lines 1 – 15).

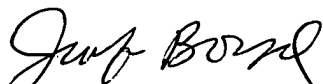
It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a kraft paper as one of the facer materials as suggested by Horner, Jr. et al. in the gypsum board composite of Jaffee motivated by the desire to save manufacturing costs by employing a conventional facer on one side and the improved and enhanced facer on the other side.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A Boyd whose telephone number is 571-272-1473. The examiner can normally be reached on Monday thru Friday (8:30am - 6:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Jennifer Boyd  
December 17, 2004

  
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